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DIALOG(R)File 351:Derwent WPI

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010902436

WPI Acc No: 1996-399387/199640

Related WPI Acc No: 1996-399330; 1996-399332; 1996-399333; 1996-399334;  
1996-399335

XRPX Acc No: N96-336666

Substrate holder for cleaning appts used in semiconductor device mfr -  
has third holding slot positioned at upper right end part of wafer

Patent Assignee: TOKYO ELECTRON KYUSHU KK (TKEL ); TOKYO ELECTRON LTD  
(TKEL )

Inventor: KITAHARA S; SHINDO N; TOSHIMA T; YOKOMIZO K

Number of Countries: 004 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 8195431	A	19960730	JP 9519820	A	19950112	199640 B
US 5730162	A	19980324	US 96583979	A	19960111	199819
US 5817185	A	19981006	US 96583979	A	19960111	199847
			US 97976262	A	19971121	
TW 348264	A	19981221	TW 96100348	A	19960112	199921
TW 348265	A	19981221	TW 96114509	A	19960112	199921
TW 349231	A	19990101	TW 96114510	A	19960112	199925
TW 349232	A	19990101	TW 96114511	A	19960112	199925
KR 239942	B1	20000115	KR 96944	A	19960112	200116

Priority Applications (No Type Date): JP 9519820 A 19950112; JP 9519821 A  
19950112; JP 9519822 A 19950112; JP 9519823 A 19950112; JP 9519824 A  
19950112; JP 9519825 A 19950112

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 8195431	A		8	H01L-021/68	
US 5730162	A		64	B08B-013/00	
US 5817185	A			B08B-013/00	Div ex application US 96583979 Div ex patent US 5730162
TW 348264	A			H01L-021/00	patent JP 8195368 patent JP 8195371 patent JP 8195372 patent JP 8195431
TW 348265	A			H01L-021/00	patent JP 8195368 patent JP 8195371 patent JP 8195372 patent JP 8195431
TW 349231	A			H01L-021/00	

TW 349232 A H01L-021/00  
KR 239942 B1 H01L-021/304

Abstract (Basic): JP 8195431 A

The substrate holder holds multiple circular substrate in parallel. Three holding slots (4-6) are formed in a set of holding rods (31-33) so as to support a wafer (W) at three points.

The second holding slot holds the wafer at the lower right part. The first holding slot holds the upper right part of the wafer from the lower end. The third holding slot is positioned at the upper right end of the wafer.

ADVANTAGE - Restrains shaking and inclination of substrate. Prevents contamination. Improves reliability of substrate conveyance. Restrains suction phenomenon of substrate by surface tension of liquid.

Dwg.0/11

Title Terms: SUBSTRATE; HOLD; CLEAN; APPARATUS; SEMICONDUCTOR; DEVICE; MANUFACTURE; THIRD; HOLD; SLOT; POSITION; UPPER; RIGHT; END; PART; WAFER  
Derwent Class: L03; M12; P43; U11  
International Patent Class (Main): B08B-013/00; H01L-021/00; H01L-021/304; H01L-021/68  
International Patent Class (Additional): B08B-011/02  
File Segment: CPI; EPI; EngPI

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DIALOG(R) File 351:Derwent WPI  
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010902383 \*\*Image available\*\*  
WPI Acc No: 1996-399334/199640  
Related WPI Acc No: 1996-399330; 1996-399332; 1996-399333; 1996-399335; 1996-399387  
XRPX Acc No: N96-336613

Impurity cleaning appts used in semiconductor device mfg process - has processing tank inside which wafer to be cleaned is immersed and first cleaning processing is performed to wafer using cleaning processing liquid followed by rinse processing using rinse liquid  
Patent Assignee: TOKYO ELECTRON KYUSHU KK (TKEL ); TOKYO ELECTRON LTD (TKEL )

Inventor: KITAHARA S; SHINDO N; TOSHIMA T; YOKOMIZO K  
Number of Countries: 004 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 8195373	A	19960730	JP 9519824	A	19950112	199640 B
US 5730162	A	19980324	US 96583979	A	19960111	199819
US 5817185	A	19981006	US 96583979	A	19960111	199847
			US 97976262	A	19971121	
TW 348264	A	19981221	TW 96100348	A	19960112	199921
TW 348265	A	19981221	TW 96114509	A	19960112	199921
TW 349231	A	19990101	TW 96114510	A	19960112	199925
TW 349232	A	19990101	TW 96114511	A	19960112	199925
KR 239942	B1	20000115	KR 96944	A	19960112	200116

Priority Applications (No Type Date): JP 9519824 A 19950112; JP 9519820 A 19950112; JP 9519821 A 19950112; JP 9519822 A 19950112; JP 9519823 A 19950112; JP 9519825 A 19950112

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 8195373	A		9	H01L-021/304	
US 5730162	A		64	B08B-013/00	

US 5817185	A	B08B-013/00	Div ex application US 96583979
			Div ex patent US 5730162
TW 348264	A	H01L-021/00	patent JP 8195368
			patent JP 8195371
			patent JP 8195372
			patent JP 8195431
TW 348265	A	H01L-021/00	patent JP 8195368
			patent JP 8195371
			patent JP 8195372
			patent JP 8195431
TW 349231	A	H01L-021/00	
TW 349232	A	H01L-021/00	
KR 239942	B1	H01L-021/304	

Abstract (Basic): JP 8195373 A

The cleaning appts comprises a wafer holder (3). A processed wafer (W) is moved using a pushing member (52). The wafer holder holds the wafer using a wafer chuck (6). The wafer is immersed into a processing tank to which cleaning processing liquid is supplied from a cleaning processing liquid supply part. Cleaning processing is performed to the wafer. Then, recycling of cleaning processing liquid is subsequently stopped.

Rinse liquid is supplied from a rinse liquid supply part through the bottom of the tank and cleaning liquid is replaced by the rinse liquid. Then, rinse processing is performed to the wafer in the same processing tank.

USE/ADVANTAGE - For removing organic contaminant, metal impurity from semiconductor wafer surface. Improves cleaning processing efficiency. Reduces size of processing tank.

Dwg.7/10

Title Terms: IMPURE; CLEAN; APPARATUS; SEMICONDUCTOR; DEVICE; MANUFACTURE; PROCESS; PROCESS; TANK; WAFER; CLEAN; IMMERSE; FIRST; CLEAN; PROCESS; PERFORMANCE; WAFER; CLEAN; PROCESS; LIQUID; FOLLOW; RINSE; PROCESS; RINSE ; LIQUID

Derwent Class: L03; M12; P43; U11

International Patent Class (Main): B08B-013/00; H01L-021/00; H01L-021/304

International Patent Class (Additional): B08B-003/10

File Segment: CPI; EPI; EngPI

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DIALOG(R)File 351:Derwent WPI

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010902382 \*\*Image available\*\*

WPI Acc No: 1996-399333/199640

Related WPI Acc No: 1996-399330; 1996-399332; 1996-399334; 1996-399335; 1996-399387

XRFX Acc No: N96-336612

Cleaning appts for washing processed substrate in semiconductor device mfg process - consists of processing tank into which rinse liquid in blown off through blowing holes provided at both sides of wafer by replacing processing liquid

Patent Assignee: TOKYO ELECTRON KYUSHU KK (TKEL ); TOKYO ELECTRON LTD (TKEL )

Inventor: KITAHARA S; SHINDO N; TOSHIMA T; YOKOMIZO K

Number of Countries: 004 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 8195372	A	19960730	JP 9519823	A	19950112	199640 B

US 5730162	A	19980324	US 96583979	A	19960111	199819
US 5817185	A	19981006	US 96583979	A	19960111	199847
			US 97976262	A	19971121	
TW 348264	A	19981221	TW 96100348	A	19960112	199921
TW 348265	A	19981221	TW 96114509	A	19960112	199921
TW 349231	A	19990101	TW 96114510	A	19960112	199925
TW 349232	A	19990101	TW 96114511	A	19960112	199925
KR 239942	B1	20000115	KR 96944	A	19960112	200116

Priority Applications (No Type Date): JP 9519823 A 19950112; JP 9519820 A 19950112; JP 9519821 A 19950112; JP 9519822 A 19950112; JP 9519824 A 19950112; JP 9519825 A 19950112

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 8195372	A		9	H01L-021/304	
US 5730162	A		64	B08B-013/00	
US 5817185	A			B08B-013/00	Div ex application US 96583979 Div ex patent US 5730162
TW 348264	A			H01L-021/00	patent JP 8195368 patent JP 8195371 patent JP 8195372 patent JP 8195431
TW 348265	A			H01L-021/00	patent JP 8195368 patent JP 8195371 patent JP 8195372 patent JP 8195431
TW 349231	A			H01L-021/00	
TW 349232	A			H01L-021/00	
KR 239942	B1			H01L-021/304	

Abstract (Basic): JP 8195372 A

The appts consists of a processing tank (3) inside which a processed wafer (W) is held by a wafer holder (4). On both sides of the wafer, a set of blowing holes (51,61,62) are provided with a set of nozzle parts (5A,5B,6A,6B) are provided. A processing liquid supply part (71) supplies a processing liquid to the processing tank and the wafer surface is washed. Then, rinse liquid is supplied from a rinse liquid supply part (74) which is at the bottom part at the processing tank through the blowing holes.

The processing liquid is thus replaced by the rinse liquid. A wafer surface is rinsed using rinse liquid, after washing it processing liquid. A rectification part (8) is provided at the lower part of the nozzles also through which rinse liquid is supplied.

USE/ADVANTAGE - For removing organic containment, metal impurity from semiconductor wafer surface. Performs rinse processing efficiently. Performs cleaning processing with high uniformity. Performs substitution of rinse liquid within short time using rectification part.

Dwg.5/14

Title Terms: CLEAN; APPARATUS; WASHING; PROCESS; SUBSTRATE; SEMICONDUCTOR; DEVICE; MANUFACTURE; PROCESS; CONSIST; PROCESS; TANK; RINSE; LIQUID; BLOW; THROUGH; BLOW; HOLE; SIDE; WAFER; REPLACE; PROCESS; LIQUID  
Derwent Class: L03; M12; P43; U11  
International Patent Class (Main): B08B-013/00; H01L-021/00; H01L-021/304  
International Patent Class (Additional): B08B-003/04  
File Segment: CPI; EPI; EngPI

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DIALOG(R)File 351:Derwent WPI

6/8/2005

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010902381 \*\*Image available\*\*

WPI Acc No: 1996-399332/199640

Related WPI Acc No: 1996-399330; 1996-399333; 1996-399334; 1996-399335;  
1996-399387

XRPX Acc No: N96-336611

Processed wafer cleaning appts for semiconductor device mfg process -  
controls operation of valve to discharge cleaning liquid obtained in  
cleaning processing flow path near connection part, through discharge  
path

Patent Assignee: TOKYO ELECTRON KYUSHU KK (TKEL ); TOKYO ELECTRON LTD  
(TKEL )

Inventor: KITAHARA S; SHINDO N; TOSHIMA T; YOKOMIZO K

Number of Countries: 004 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 8195371	A	19960730	JP 9519821	A	19950112	199640 B
US 5730162	A	19980324	US 96583979	A	19960111	199819
US 5817185	A	19981006	US 96583979	A	19960111	199847
			US 97976262	A	19971121	
TW 348264	A	19981221	TW 96100348	A	19960112	199921
TW 348265	A	19981221	TW 96114509	A	19960112	199921
TW 349231	A	19990101	TW 96114510	A	19960112	199925
TW 349232	A	19990101	TW 96114511	A	19960112	199925
KR 239942	B1	20000115	KR 96944	A	19960112	200116

Priority Applications (No Type Date): JP 9519821 A 19950112; JP 9519820 A  
19950112; JP 9519822 A 19950112; JP 9519823 A 19950112; JP 9519824 A  
19950112; JP 9519825 A 19950112

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 8195371	A		9	H01L-021/304	
US 5730162	A		64	B08B-013/00	
US 5817185	A			B08B-013/00	Div ex application US 96583979 Div ex patent US 5730162
TW 348264	A			H01L-021/00	patent JP 8195368 patent JP 8195371 patent JP 8195372 patent JP 8195431
TW 348265	A			H01L-021/00	patent JP 8195368 patent JP 8195371 patent JP 8195372 patent JP 8195431
TW 349231	A			H01L-021/00	
TW 349232	A			H01L-021/00	
KR 239942	B1			H01L-021/304	

Abstract (Basic): JP 8195371 A

The appts has a processing tank (4) in which a number of wafers are arranged. Cleaning liquid is introduced through a cleaning processing flow path (5) and the rinsing liquid is supplied through a rinsing liquid supply path (6). After the wafers the washed with the cleaning liquid, the rinsing process is carried out. A valve (8) is provided near a connection part (60) in the cleaning processing flow path. The liquid flow path is branched into a large diametrical first flow path (71) and a small diametrical second flow path (72).

The valve opens and closes the first and second flow paths. The first flow path is opened at the time of inflow of the cleaning liquid and the discharge valve and the second flow path are closed. During the

rinsing processing, the second flow path and the discharge valve are opened and the first flow path is closed. A control part controls the operation of the valve to discharge cleaning liquid in the cleaning processing flow path near the connection part, through the discharge path.

USE/ADVANTAGE - In removing organic containment and metal impurities from semiconductor wafer. Shortens time taken for substituting cleaning process with rinsing liquid. Prevents mixing of cleaning liquid and rinsing liquid. Reduces rinsing liquid consumption. Shortens rinsing processing time.

Dwg.3/9

Title Terms: PROCESS; WAFER; CLEAN; APPARATUS; SEMICONDUCTOR; DEVICE; MANUFACTURE; PROCESS; CONTROL; OPERATE; VALVE; DISCHARGE; CLEAN; LIQUID; OBTAIN; CLEAN; PROCESS; FLOW; PATH; CONNECT; PART; THROUGH; DISCHARGE; PATH

Derwent Class: L03; M12; P43; U11

International Patent Class (Main): B08B-013/00; H01L-021/00; H01L-021/304

International Patent Class (Additional): B08B-003/04

File Segment: CPI; EPI; EngPI

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DIALOG(R) File 351:Derwent WPI

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010902379 \*\*Image available\*\*

WPI Acc No: 1996-399330/199640

Related WPI Acc No: 1996-399332; 1996-399333; 1996-399334; 1996-399335; 1996-399387

XRAM Acc No: C96-125501

XRPX Acc No: N96-336609

Washing method using reduced size treatment tank - by transferring wafer in cassette to intermediate holding part by grasping device

Patent Assignee: TOKYO ELECTRON KYUSHU KK (TKEL ); TOKYO ELECTRON LTD (TKEL )

Inventor: KITAHARA S; SHINDO N; TOSHIMA T; YOKOMIZO K

Number of Countries: 004 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 8195368	A	19960730	JP 9519822	A	19950112	199640 B
US 5730162	A	19980324	US 96583979	A	19960111	199819
US 5817185	A	19981006	US 96583979	A	19960111	199847
			US 97976262	A	19971121	
TW 348264	A	19981221	TW 96100348	A	19960112	199921
TW 348265	A	19981221	TW 96114509	A	19960112	199921
TW 349231	A	19990101	TW 96114510	A	19960112	199925
TW 349232	A	19990101	TW 96114511	A	19960112	199925
KR 239942	B1	20000115	KR 96944	A	19960112	200116

Priority Applications (No Type Date): JP 9519822 A 19950112; JP 9519820 A 19950112; JP 9519821 A 19950112; JP 9519823 A 19950112; JP 9519824 A 19950112; JP 9519825 A 19950112

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 8195368	A		13	H01L-021/304	
US 5730162	A		64	B08B-013/00	
US 5817185	A			B08B-013/00	Div ex application US 96583979
					Div ex patent US 5730162
TW 348264	A			H01L-021/00	patent JP 8195368
					patent JP 8195371

			patent JP 8195372
			patent JP 8195431
TW 348265	A	H01L-021/00	patent JP 8195368
			patent JP 8195371
			patent JP 8195372
			patent JP 8195431
TW 349231	A	H01L-021/00	
TW 349232	A	H01L-021/00	
KR 239942	B1	H01L-021/304	

Abstract (Basic): JP 8195368 A

A washing method comprises: (a) a first transfer process in which a wafer in a cassette (C) is transferred to an intermediate holding part by a first grasping device; (b) a moving process, in which the first grasping device and the intermediate holding part are relatively moved to a position displaced by a distance equivalent to  $m/n$  times as large as an alignment pitch, (where  $n$  is at least 2 or an integer; and  $m$  is at least one integer); and (c) a second transfer process, in which the wafer is transferred to a holding member in the treatment tank. By repeating the first transfer process and the moving process and effecting the first transfer process, the wafer is held at a pitch  $1/n$  times as large as an alignment pitch in the cassette.

ADVANTAGE - The size of the treatment tank is reduced.

Dwg.2/23

Title Terms: WASHING; METHOD; REDUCE; SIZE; TREAT; TANK; TRANSFER; WAFER; CASSETTE; INTERMEDIATE; HOLD; PART; GRASP; DEVICE

Derwent Class: L03; M12; P43; U11

International Patent Class (Main): B08B-013/00; H01L-021/00; H01L-021/304

International Patent Class (Additional): C23G-001/00; C23G-003/00;

H01L-021/68

File Segment: CPI; EPI; EngPI

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## 中華民國專利公報 (19)(12)

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(44)中華民國88年(1999)01月01日

發明

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(51)Int. Cl. 5: H01L21/00

(54)名 稱: 基板洗淨裝置及基板洗淨方法

(21)申請案號: 85114510

(22)申請日期: 中華民國85年(1996)01月12日

(72)發明人:

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日本

戶島孝之

日本

北爪重雄

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(71)申請人:

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日本

(74)代理人: 林春剛 先生

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## [57]申請專利範圍:

1. 一種基板洗淨裝置, 其主要可將實質上呈間距間隔被配列在卡匣內之多個基板自卡匣內取出, 且將之搬送到處理槽, 而在處理槽內一次進行洗淨處理, 其特徵在於備有:

形成有依較卡匣內之配列間距間隔為狹窄之間距間隔來保持基板之多個保持溝的保持具;

自卡匣取出基板, 且將之移載到上述保持具之移載機構;

接受基板, 而以洗淨液來洗淨基板, 其次則以清洗液來清洗基板的處理槽;

將洗淨液供給到上述處理槽內之清洗液供給部及;

將用於保持基板之保持具搬送到處理槽, 且將基板與保持具一起浸漬在洗淨液之中的保持具搬送機構;

在以洗淨液洗淨基板後, 則將清洗液自上述清洗液供給部導入到處理槽內, 而將處理槽內部, 自洗淨液置換成清洗

液。

2. 如申請專利範圍第1項之基板洗淨裝置, 上述保持具之保持溝的間距間隔在2mm以上。

3. 一種基板洗淨方法, 其主要係將實質上依等間距間隔被配列在卡匣內之多個基板自卡匣取出, 且將之搬送到處理槽, 而在處理槽內一次進行洗淨處理, 其特徵在於備有:

(a)使依較卡匣內之配列間距間隔為狹窄的間隔來保持多個基板之保持具移換的工程;

(b)將洗淨液供給到處理槽內的工程;

(c)將用於保持基板之保持具搬送到處理槽的工程;

(d)將基板與保持具一起浸漬在處理槽內的洗淨液中, 而洗淨基板之工程及;

(e)在以洗淨液洗淨基板後, 將清洗液導入處理槽內, 而將處理槽內的洗淨液置換成清洗液的工程。

(2)

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圖式簡單說明：

第一圖係表洗淨處理系統之整體概要圖。

第二圖係表基板洗淨裝置之概要的立體圖。

第三圖係表將本發明之第1實施例之基板洗淨裝置的一部分切開加以表示的方塊斷面圖。

第四圖係表在第1實施例之裝置中所安裝之閥之內部構造之縱斷面圖。

第五圖A，第五圖B分別係用於說明基板洗淨裝置之動作的方塊斷面圖。

第六圖係表洗淨液與清洗液之共用配管的部分放大斷面圖。

第七圖係表第1實施例之變形例之裝置的方塊斷面圖。

第八圖係表習知裝置之縱斷面圖。

第九圖係表習知裝置之方塊斷面圖。

第十圖係表基板洗淨裝置之概要的立體圖。

第十一圖係表將本發明之第2實施例之基板洗淨裝置的一部分切開加以表示之方塊斷面圖。

第十二圖係表將本發明之第2實施例之基板洗淨裝置的一部分切開加以表示之方塊斷面圖。

第十三圖係表由正面來看基板洗淨裝置之縱斷面圖。

第十四圖係表由側面來看基板洗淨裝置之縱斷面圖。

第十五圖係表習知裝置之方塊斷面圖。

第十六圖係表基板洗淨裝置之概要的立體圖。

第十七圖係表本發明之第3實施例之基板洗淨裝置的分解立體圖。

第十八圖係表將本發明之第3實施例之基板洗淨裝置之一部分切開表示之方塊斷面圖。

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第十九圖係表整流板之一例的立體圖。

第二十圖A，第二十圖B分別係用於說明晶圓移換動作的概要圖。

第二十一圖A，第二十一圖B分別係用於說明洗淨處理動作的概要斷面圖。

第二十二圖A，第二十二圖B分別係用於說明洗淨液供給動作的方塊斷面圖。

第二十三圖係用於說明洗淨/清洗動作的縱斷面圖。

第二十四圖係表第3實施形態之變形例之裝置的方塊斷面圖。

第二十五圖係表習知裝置的方塊斷面圖。

第二十六圖係表本發明之第4實施例之基板洗淨裝置的分解立體圖。

第二十七圖係表第1晶圓夾具之部分放大圖。

第二十八圖係表第2晶圓夾具之部分放大圖。

第二十九圖係表基板洗淨裝置的方塊斷面圖。

第三十圖係用於說明晶圓移換動作的概要圖。

第三十一圖係用於說明晶圓移換動作的概要圖。

第三十二圖係用於說明在板上之晶圓之排列狀態的概要圖。

第三十三圖係用於說明晶圓移換動作的概要圖。

第三十四圖係用於說明在板上之晶圓之排列狀態的概要圖。

第三十五圖係用於說明晶圓移換動作的概要圖。

第三十六圖係表浸漬有晶圓之洗淨處理槽的斷面圖。

第三十七圖係表基板洗淨裝置之概要的立體圖。

第三十八圖係表本發明之第5實施例之基板洗淨裝置的分解立體圖。

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圖係表整流板之一例的立體

圖A，第二十圖B分別係用於  
換動作的概要圖。

一圖A，第二十一圖B分別係  
淨處理動作的概要斷面圖。

二圖A，第二十二圖B分別係  
淨液供給動作的方塊斷面圖。

三圖係用於說明洗淨/清洗  
面圖。

四圖係表第3實施形態之變  
的方塊斷面圖。

五圖係表習知裝置的方塊斷

六圖係表本發明之第4實施  
淨裝置的分解立體圖。

七圖係表第1晶圓夾具之部

八圖係表第2晶圓夾具之部

九圖係表基板洗淨裝置的方

圖係用於說明晶圓移換動作

一圖係用於說明晶圓移換動

二圖係用於說明在板上之晶  
線的概要圖。

三圖係用於說明晶圓移換動

四圖係用於說明在板上之晶  
線的概要圖。

五圖係用於說明晶圓移換動

六圖係表浸漬有晶圓之洗淨  
面圖。

七圖係表基板洗淨裝置之概

八圖係表本發明之第5實施  
淨裝置的分解立體圖。

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第三十九圖A，第三十九圖B分別係  
用於說明晶圓移換動作的概要圖。

第四十圖係表載置有晶圓之洗淨用  
板的概要圖。

第四十一圖表本發明之第6實施例  
之基板洗淨裝置的分解立體圖。

第四十二圖A，第四十二圖B，第四  
十二圖C分別係用於說明裝置之動作的  
概要圖。

第四十三圖係表由側面來看在板上  
排列整齊之晶圓的圖。

第四十四圖係表基板洗淨裝置之概  
要的立體圖。

第四十五圖係表將本發明之第7實  
施例之基板洗淨裝置之處理槽的一部分切  
開而表示內部的斷面立體圖。

第四十六圖係表用於噴出清洗液之  
噴嘴之吹出孔之配列形態的平面圖。

第四十七圖係表基板洗淨裝置之概  
要的方塊斷面圖。

第四十八圖係表清洗液之運動的模  
式圖。

第四十九圖係將本發明之第8實施  
例之基板洗淨裝置加以切開表示的分解立  
體圖。

第五十圖係表第8實施例之基板洗  
淨裝置的方塊斷面圖。

第五十一圖係表安裝在整流板之噴

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嘴的斷面模式圖。

第五十二圖A，第五十二圖B，第五  
十二圖C分別用於說明洗淨液之運動以  
及清洗液之運動的斷面模式圖。

第五十三圖係用於說明噴嘴射出液  
體之範圍的模式圖。

第五十四圖A，第五十四圖B分別係  
各種噴嘴的概要圖。

第五十五圖係用於說明以往之洗淨  
動作的說明圖。

第五十六圖係表示將本發明之第9  
實施例之基板洗淨裝置加以切開表示的分  
解立體圖。

第五十七圖係由長度方向來看晶圓  
板的圖。

第五十八圖A，第五十八圖B，第五  
十八圖C，第五十八圖D分別係表晶圓板  
之保持溝的縱斷面圖。

第五十九圖係表晶圓板、昇降機構  
以及夾持機構的概要面圖。

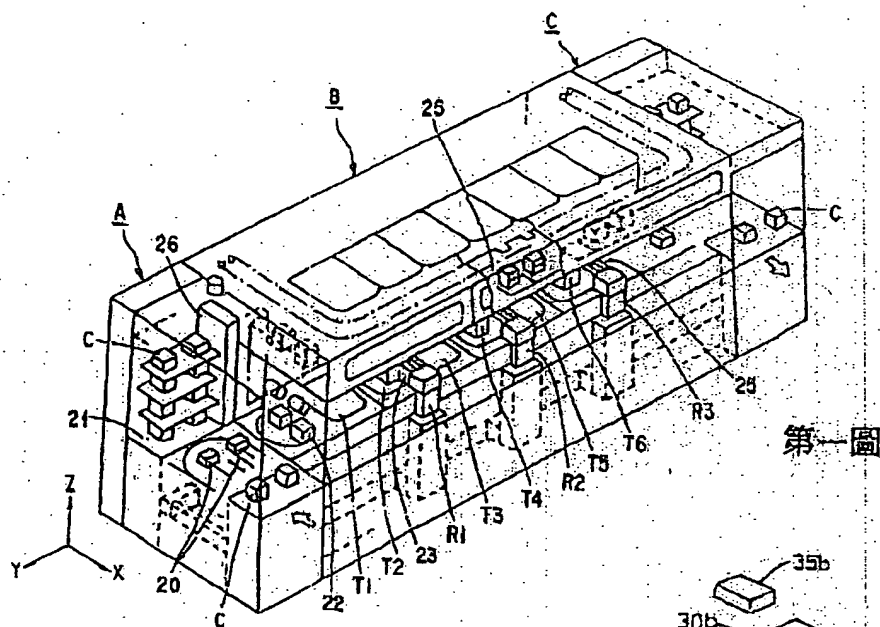
第六十圖係表備有晶圓板之基板洗  
淨裝置的概要圖。

第六十一圖係表以往之洗淨用晶圓  
板的說明圖。

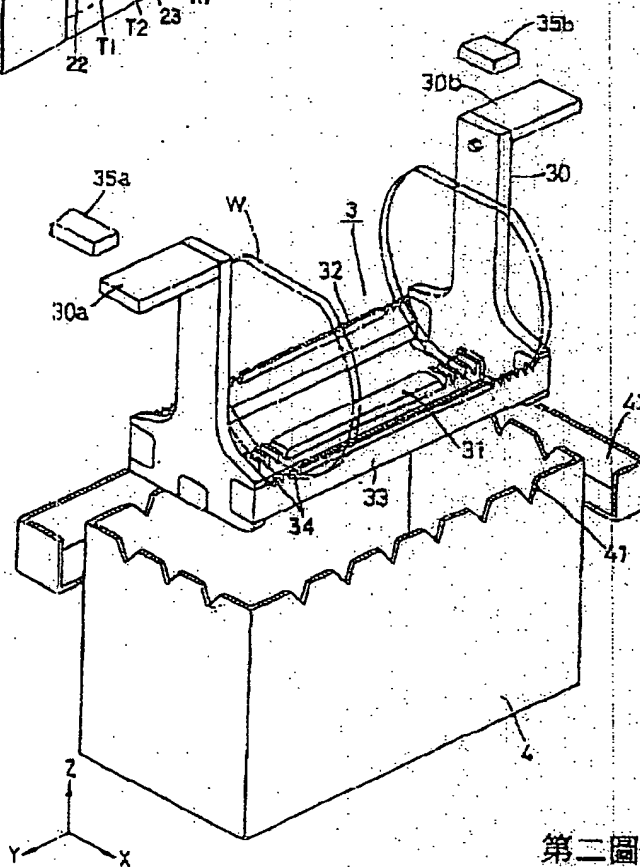
第六十二圖係表以往之洗淨用晶圓  
板的說明圖。

第六十三圖係表以往之洗淨用晶圓  
板的說明圖。

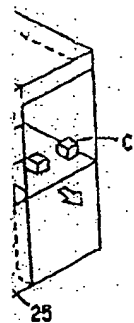
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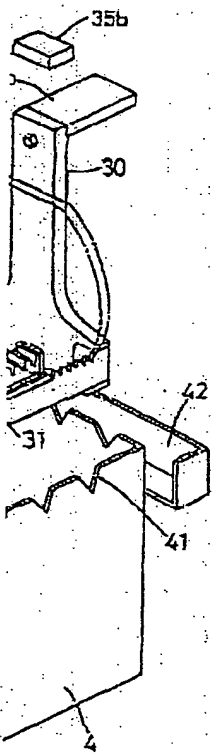
第一圖



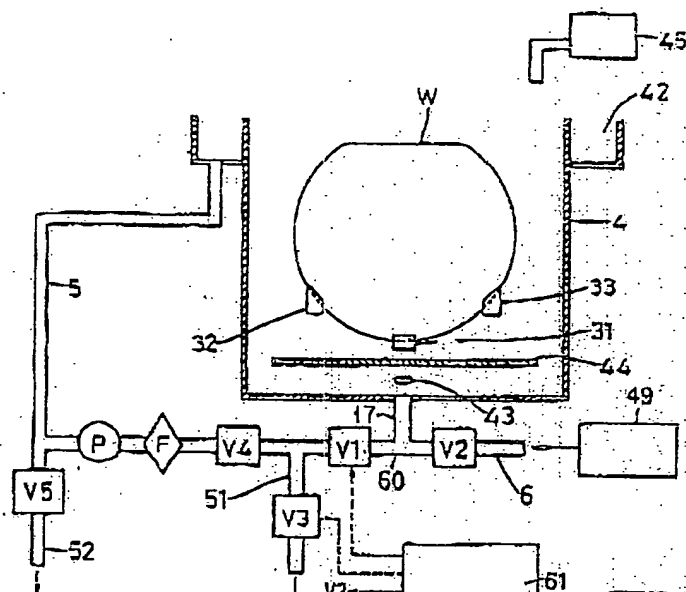
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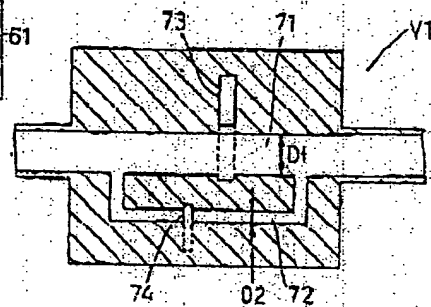
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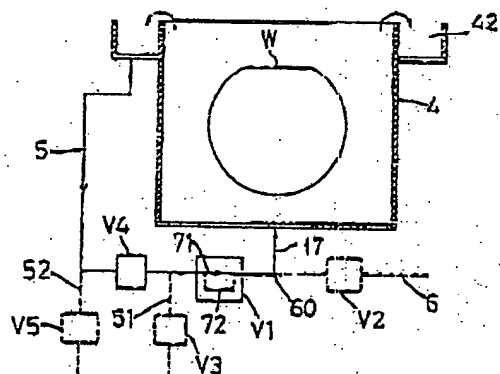
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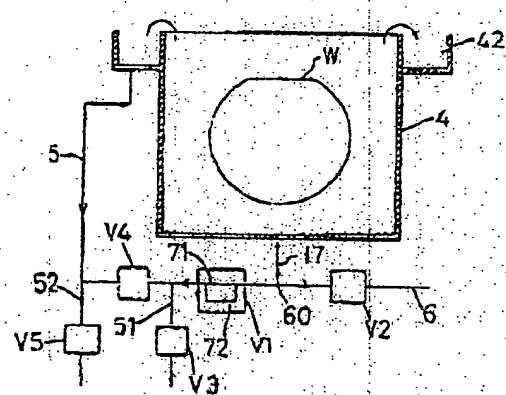
第三圖



第四圖



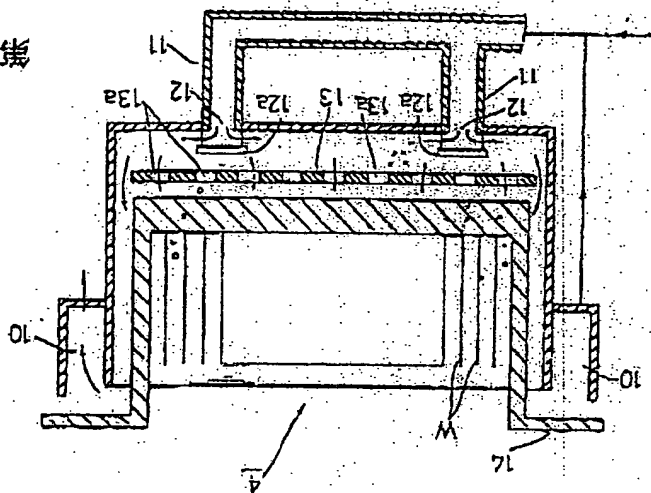
第五圖 A



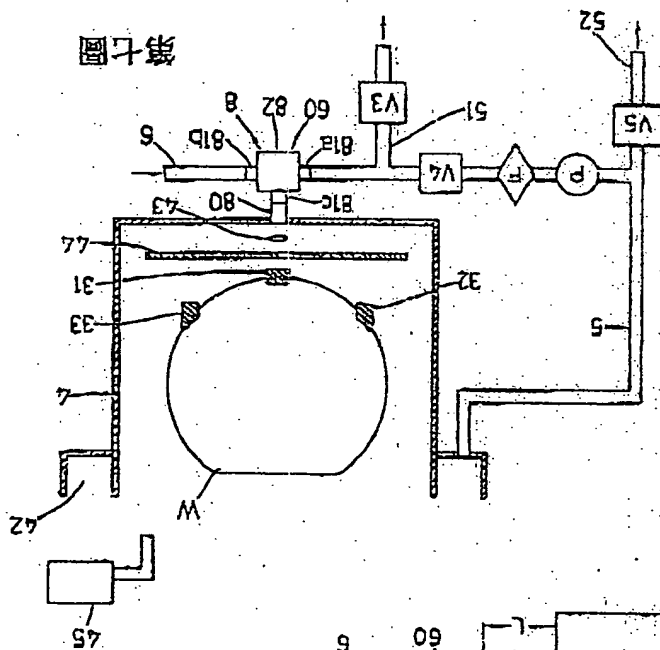
第五圖 B

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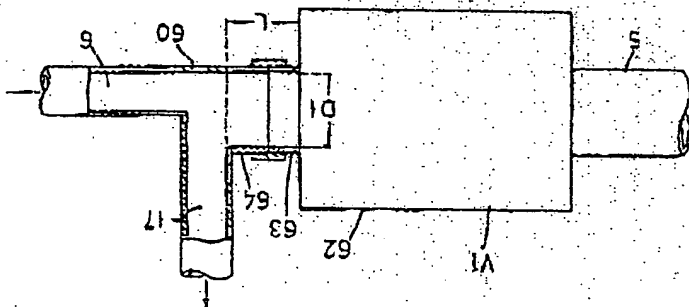
第八圖



第七圖

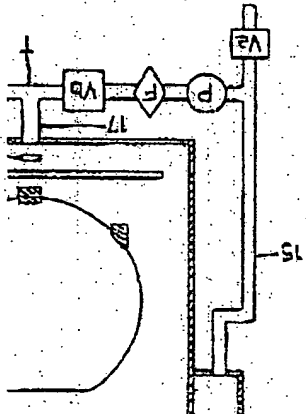


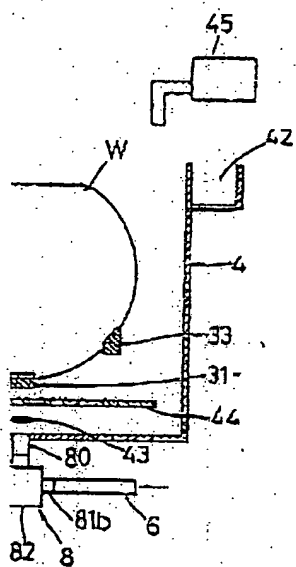
第六圖



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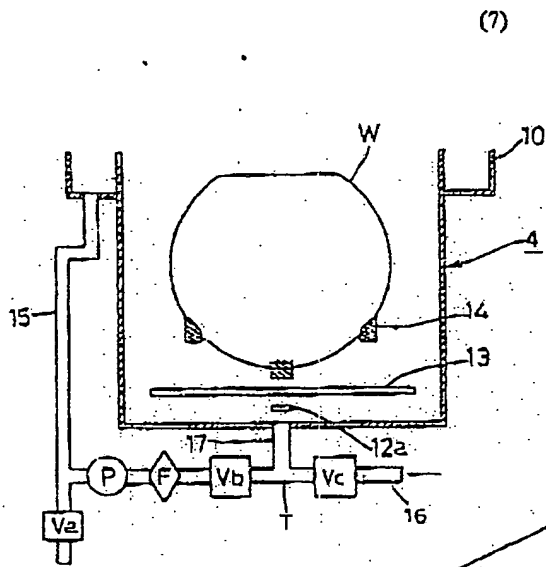
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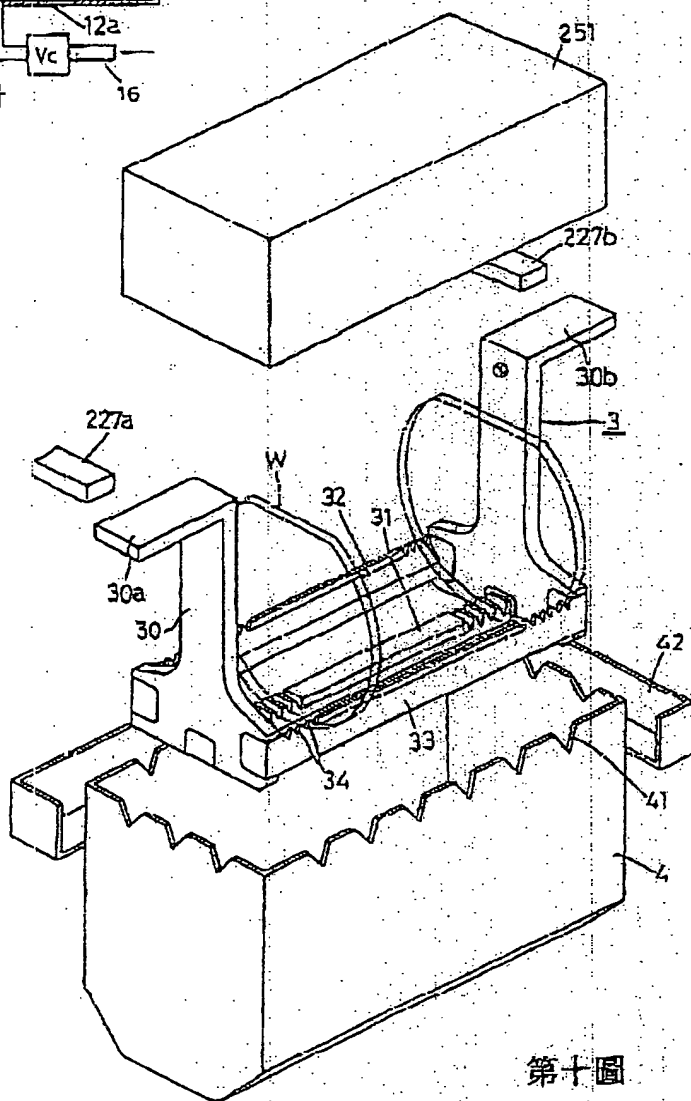


第七圖

八圖

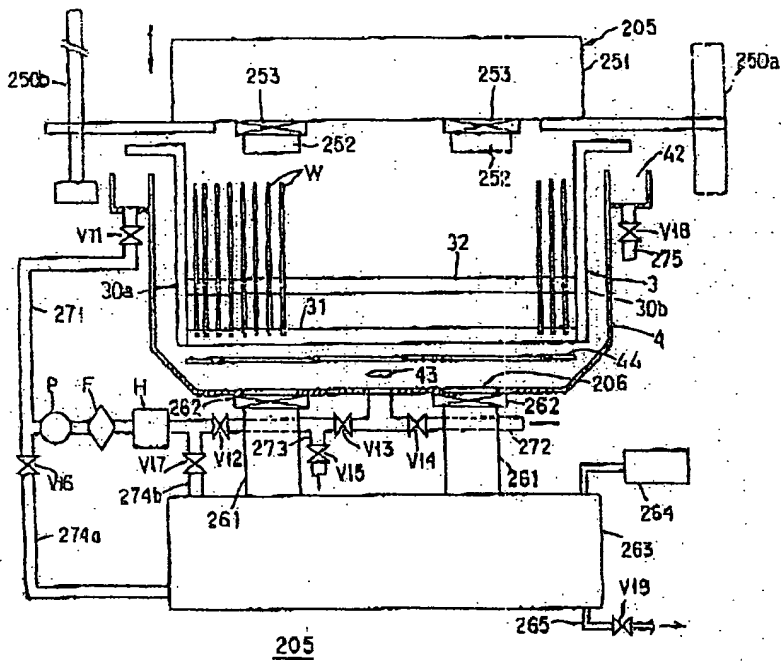


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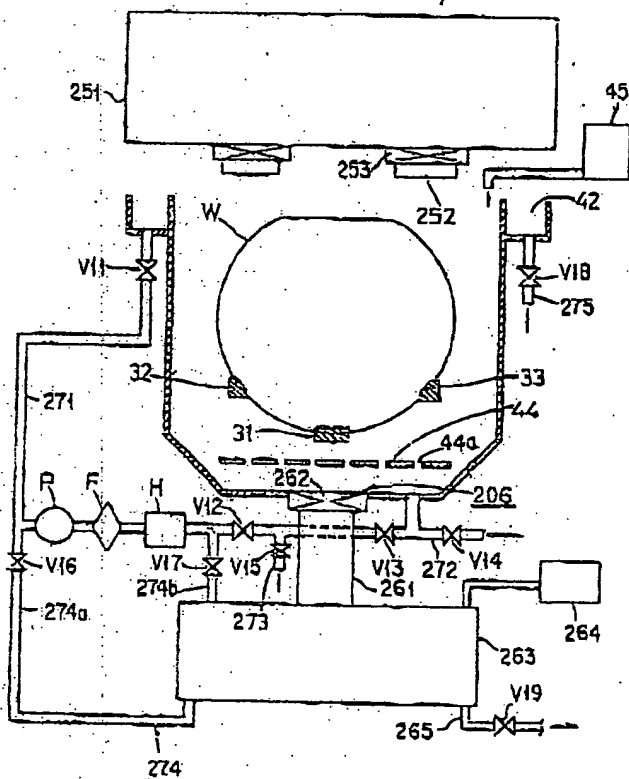


第十圖

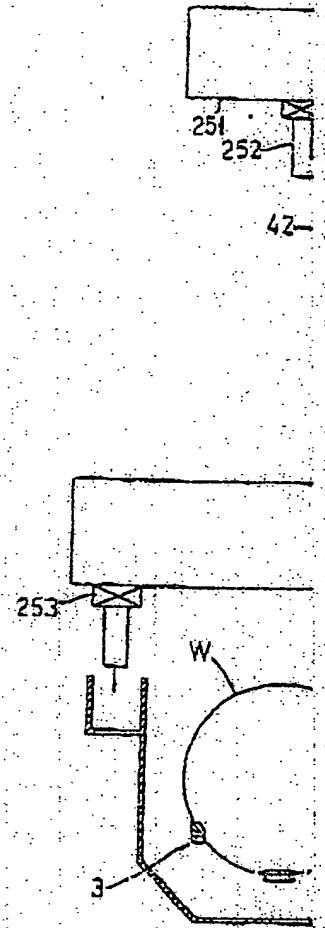
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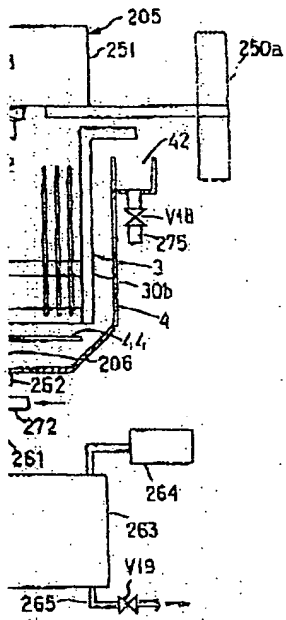
第十一圖



第十二圖

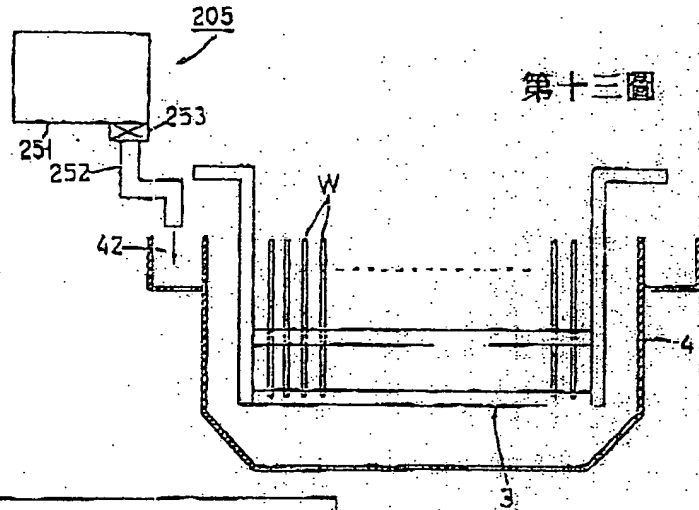


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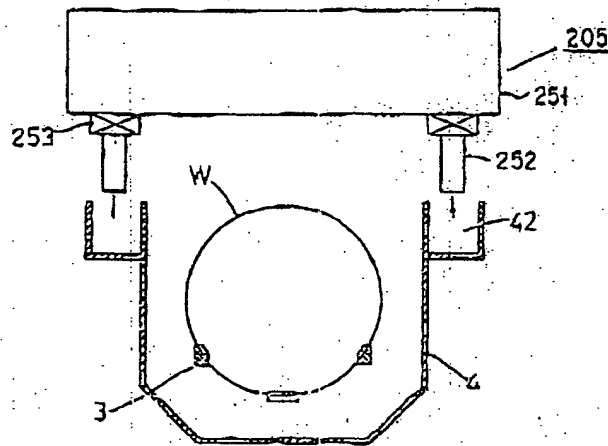


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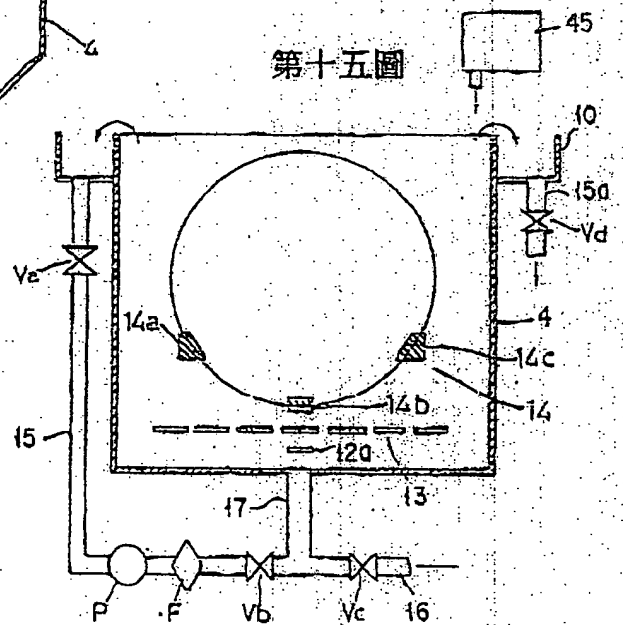
第十二圖



第十三圖

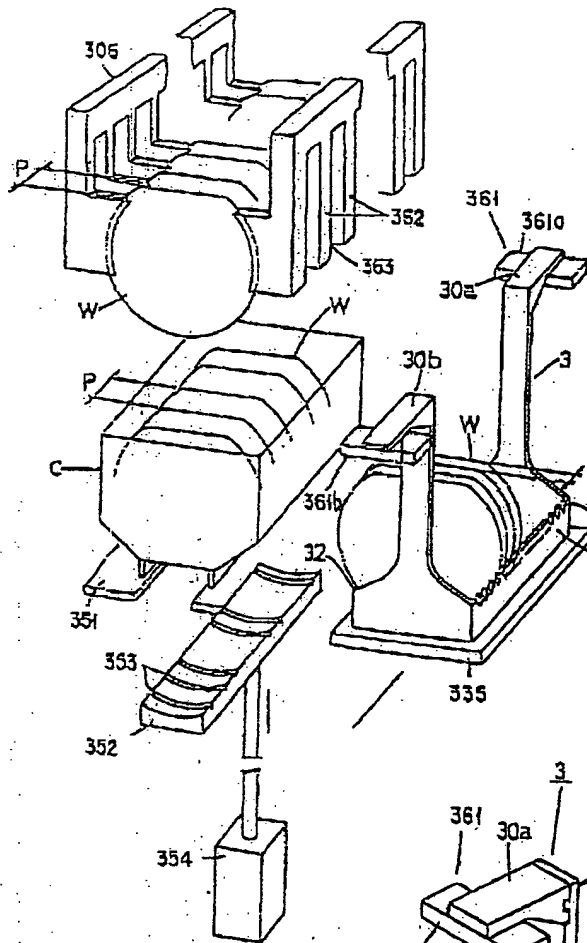


第十四圖



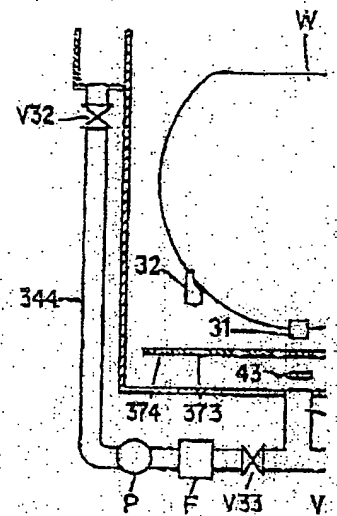
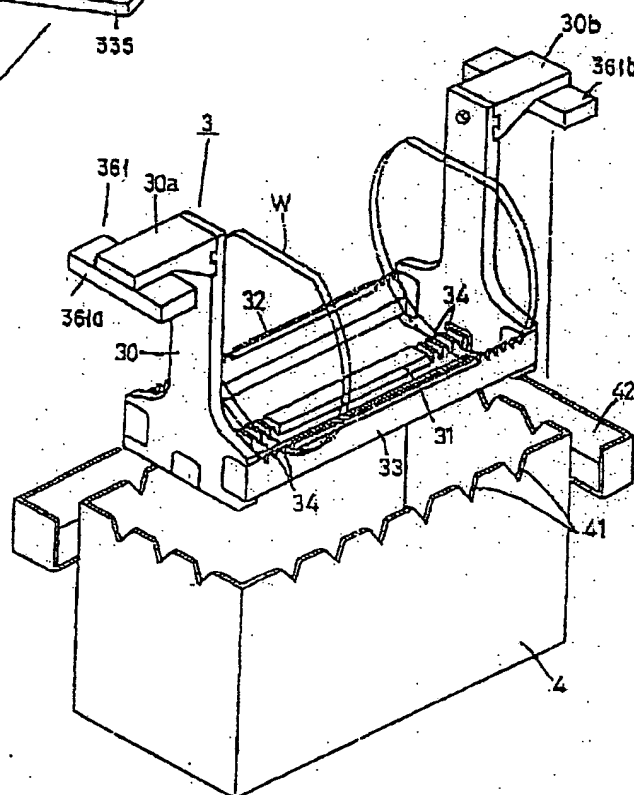
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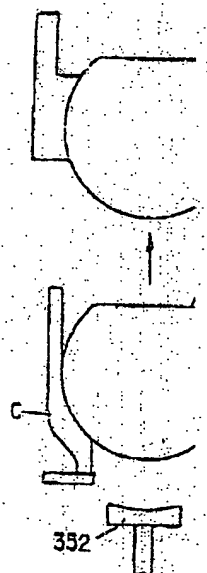


第十六圖

第十七圖

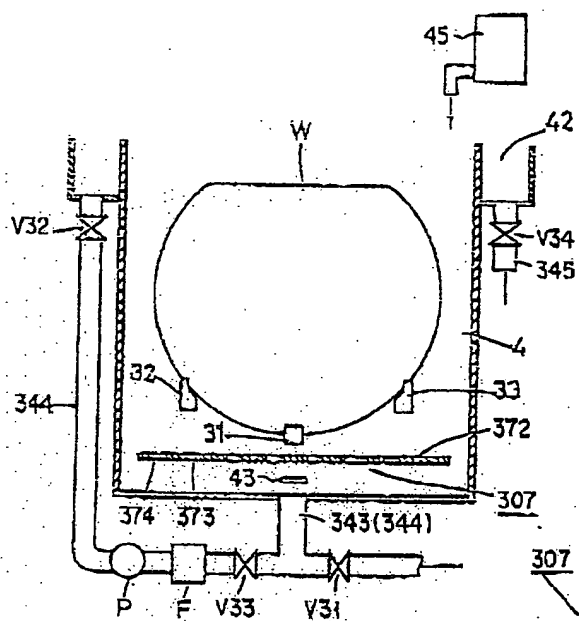


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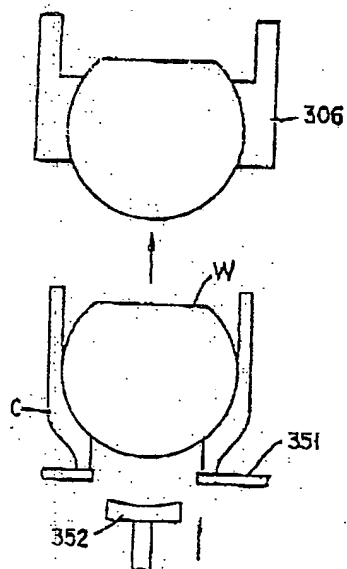
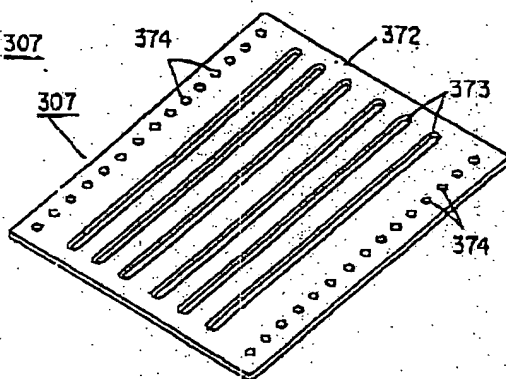
第二十圖

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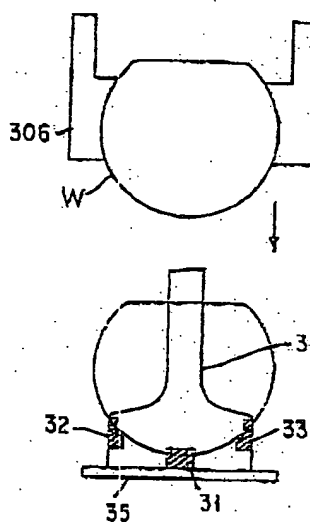


第十八圖

第十九圖

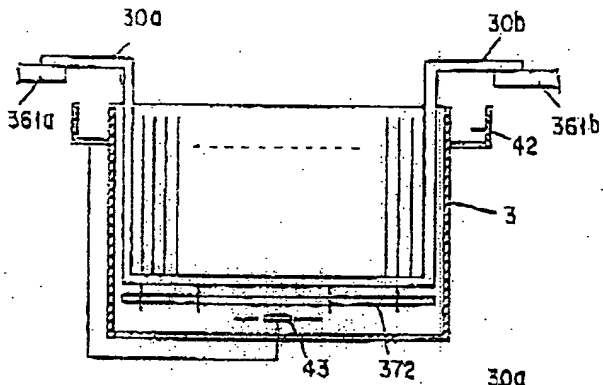


第二十圖 A

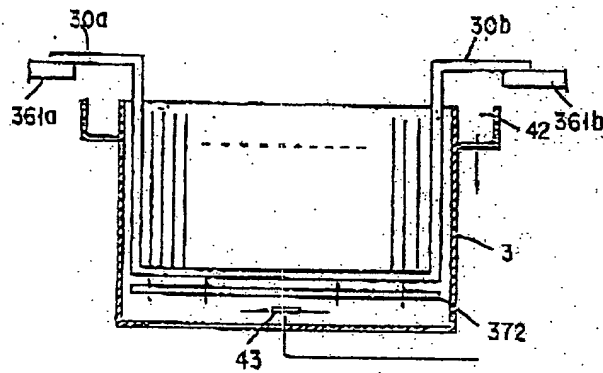


第二十圖 B

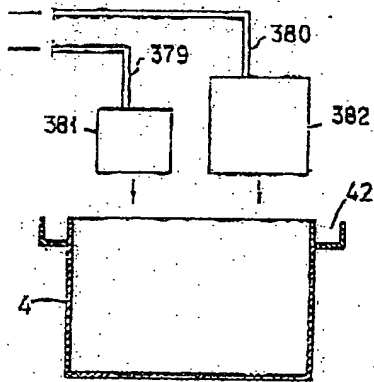
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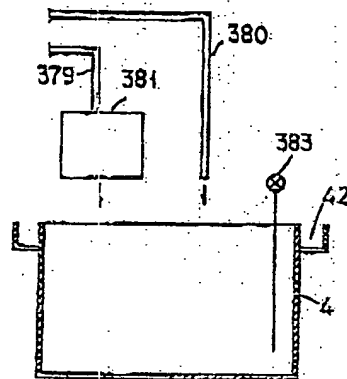
第二十一圖 A



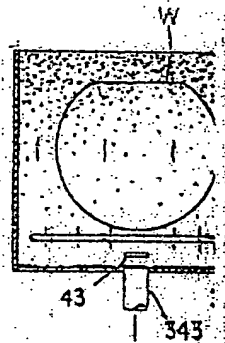
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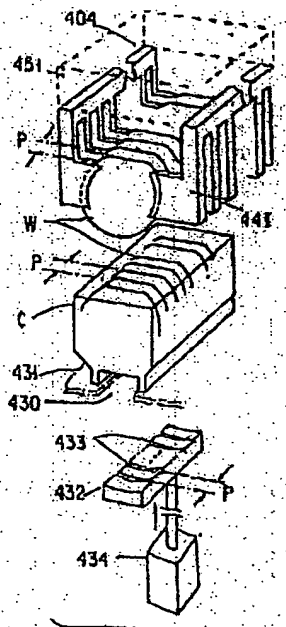
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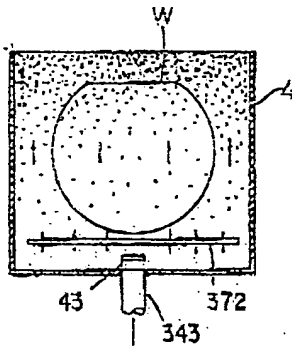
第二十二圖 B



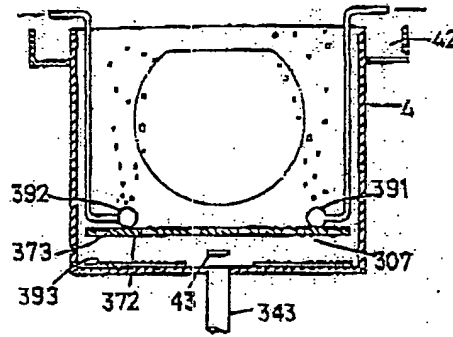
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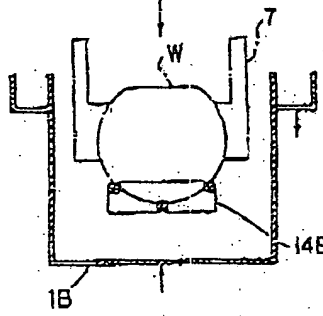
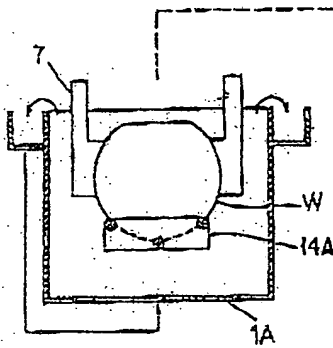
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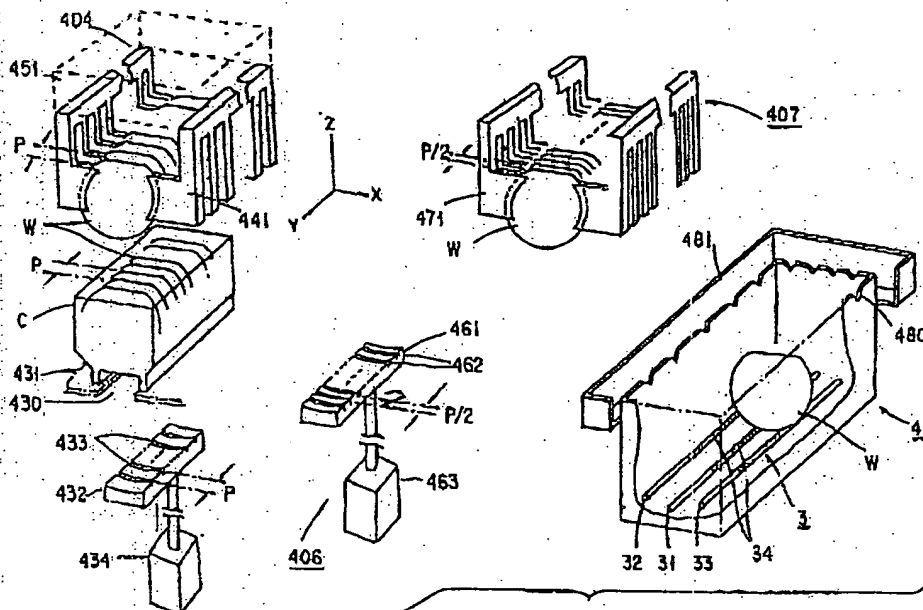
第二十三圖



第二十四圖

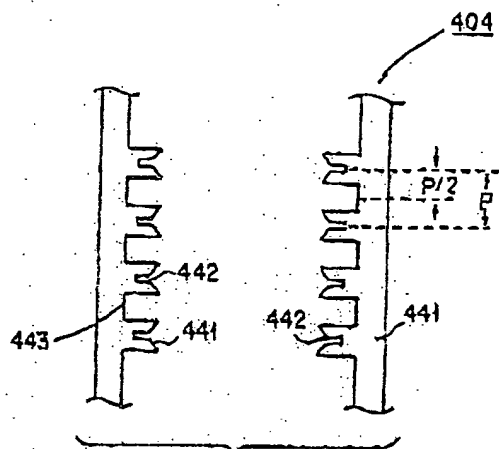


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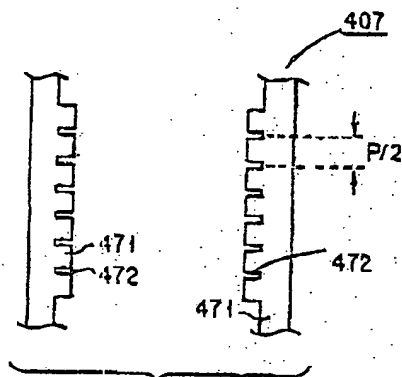


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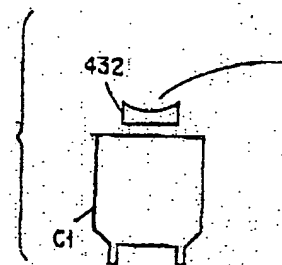
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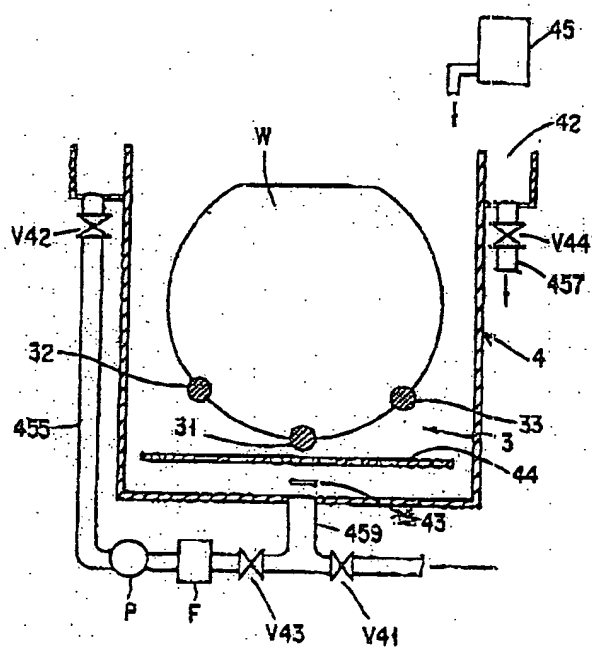
第二十七圖



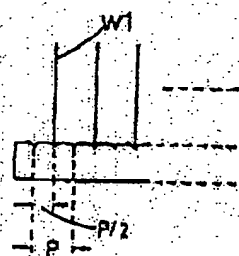
第二十八圖



第三十圖

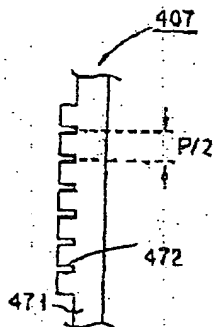


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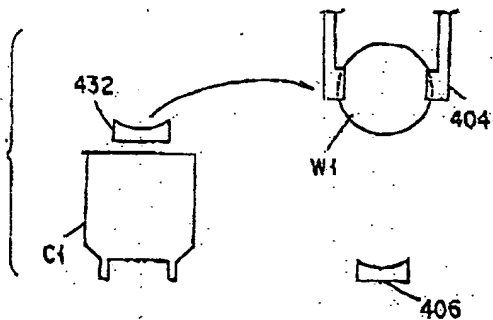


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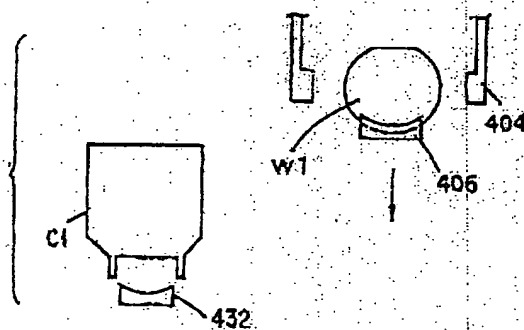
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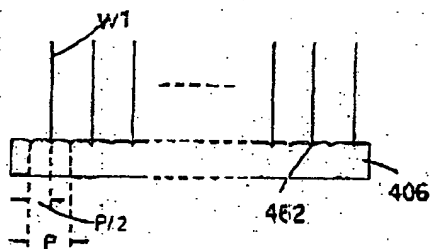
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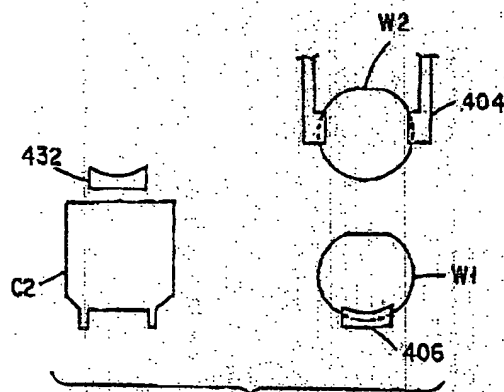
第三十圖



第三十一圖

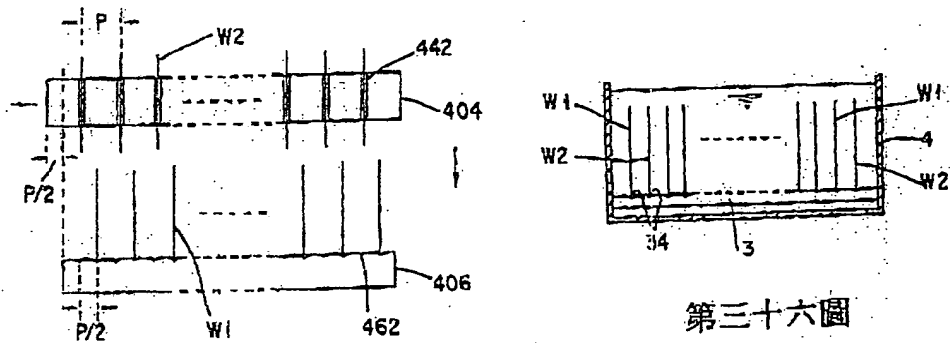


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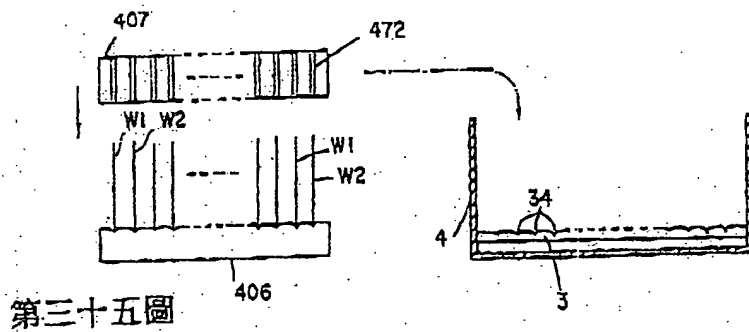
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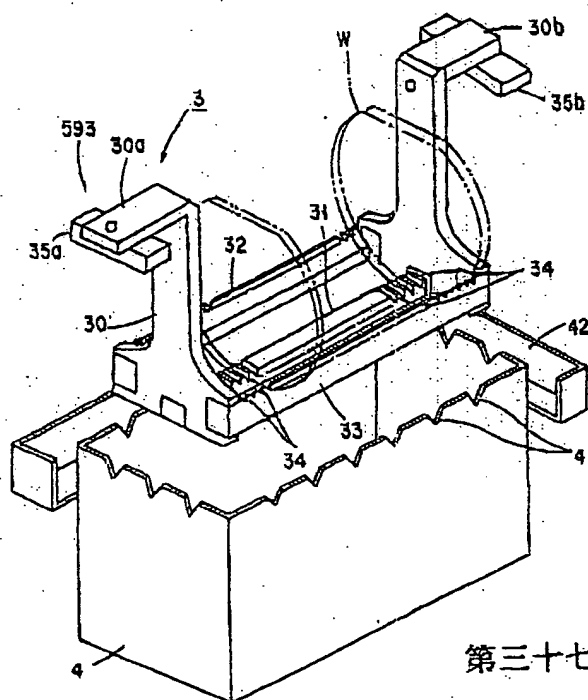


第三十四圖

第三十六圖

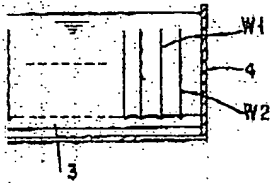


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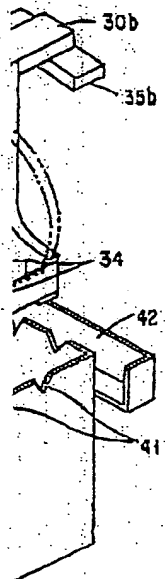
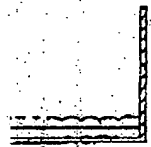


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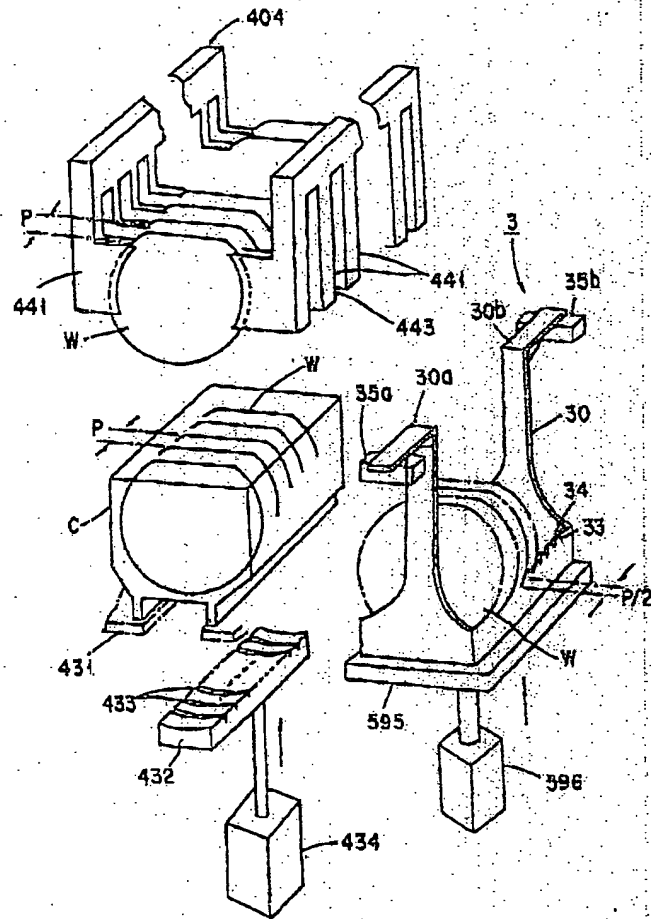
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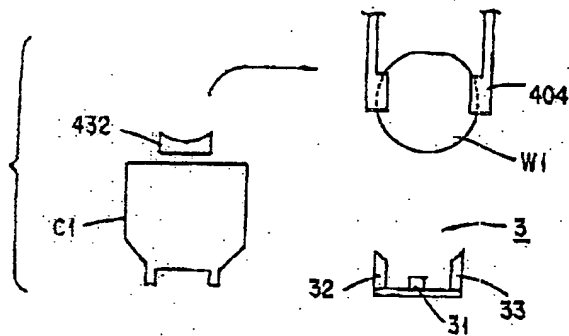


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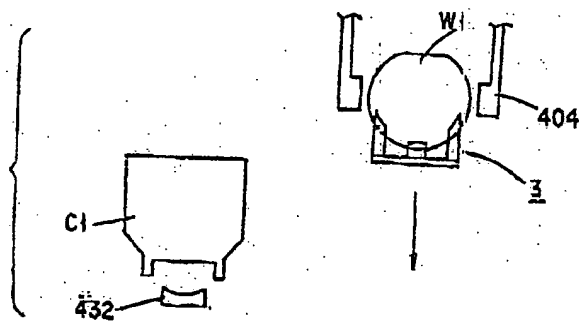


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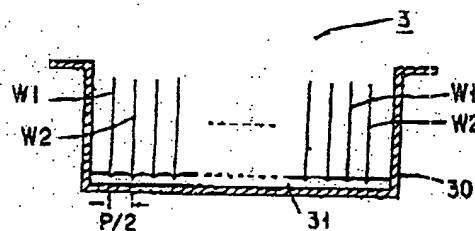
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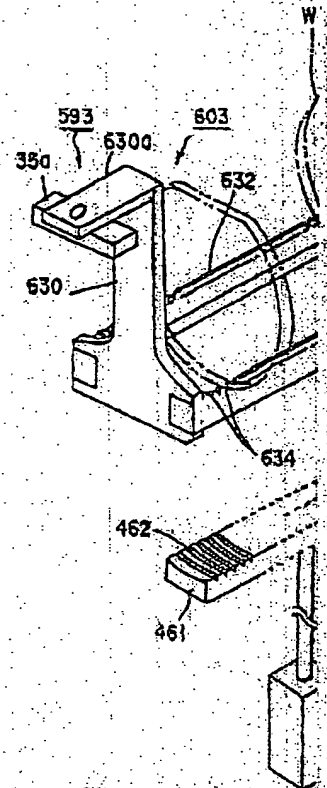
第三十九圖 A



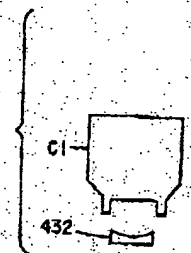
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第四十圖

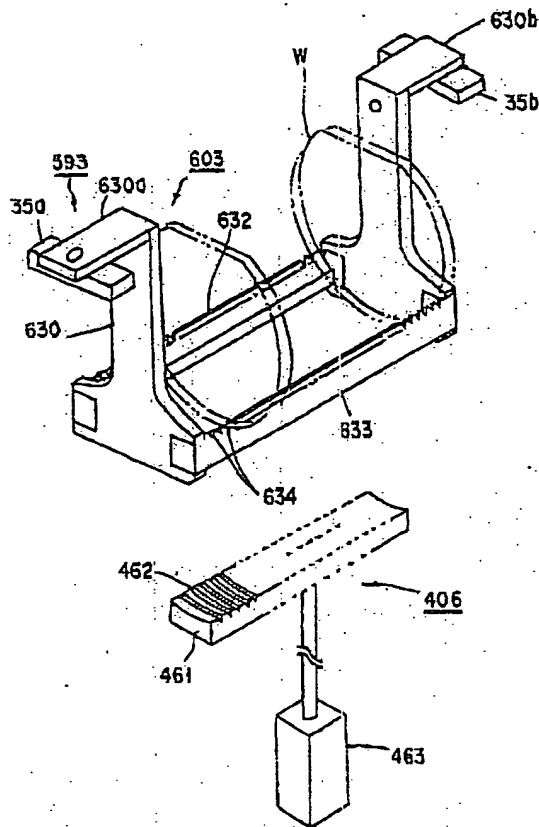


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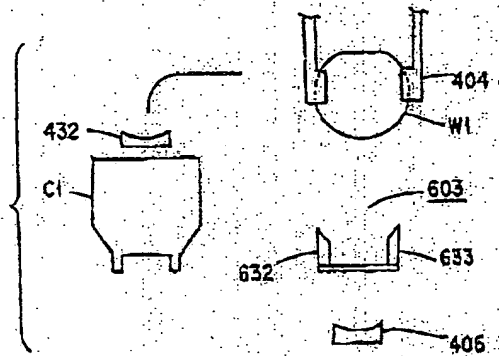


第四十二圖

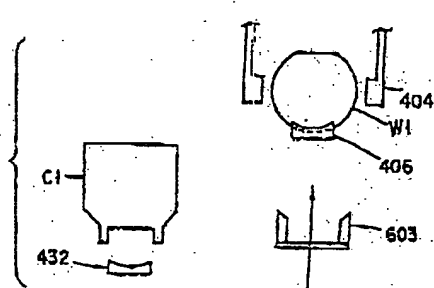
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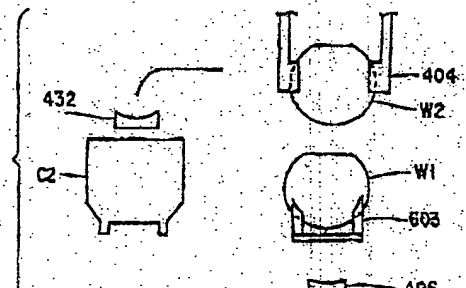
第四十一圖



第四十二圖 A

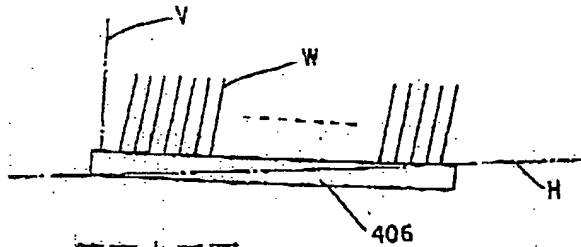


第四十二圖 B

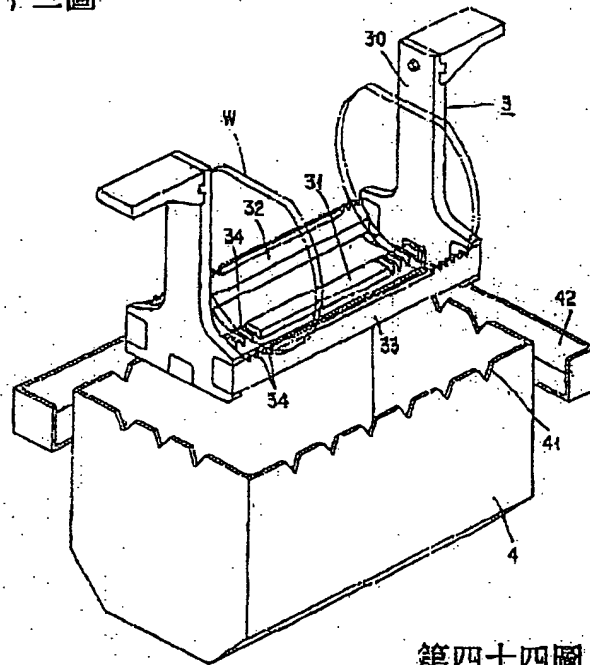


第四十二圖 C

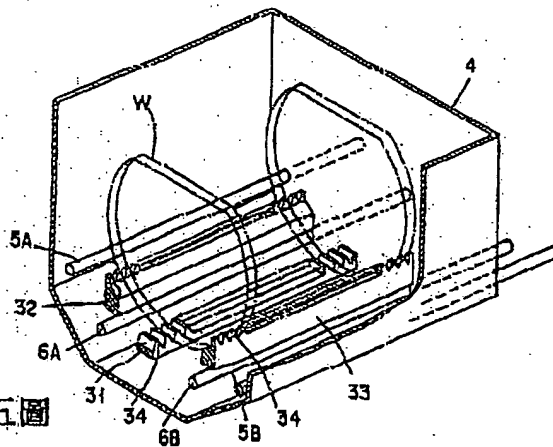
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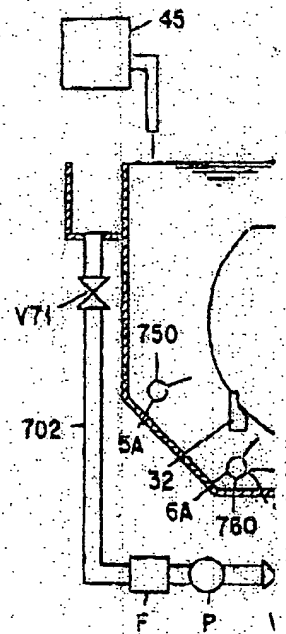
第四十三圖



第四十四圖

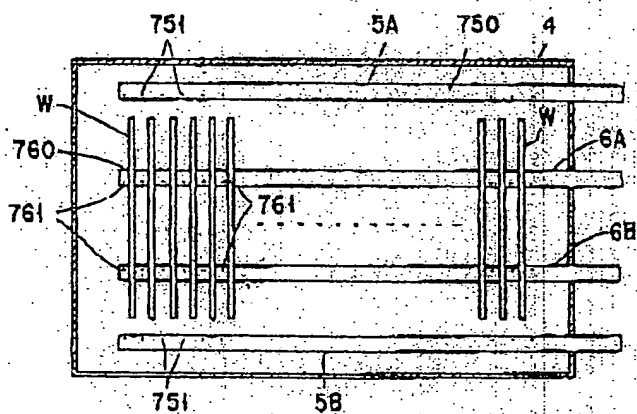


第四十五圖

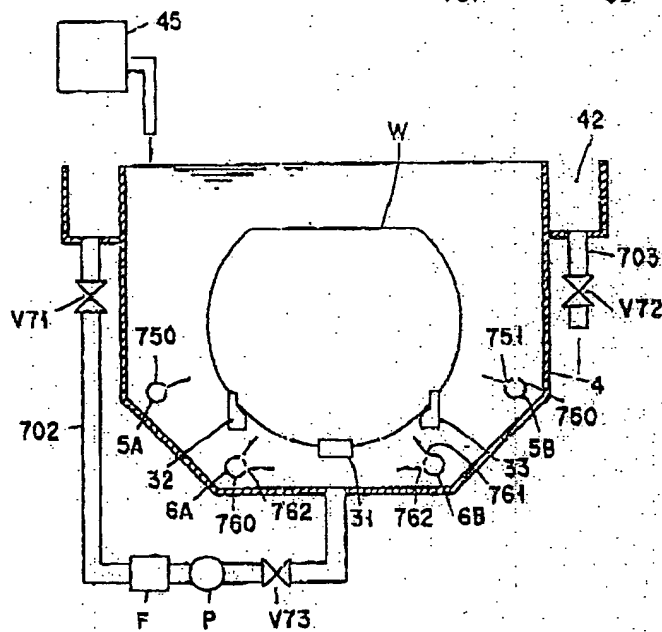


第四十

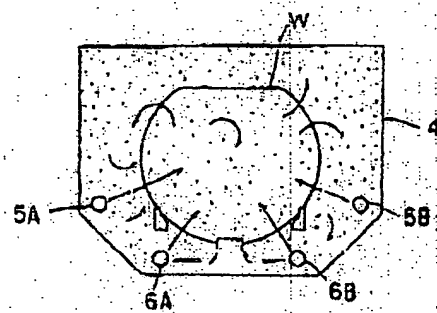
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第四十六圖

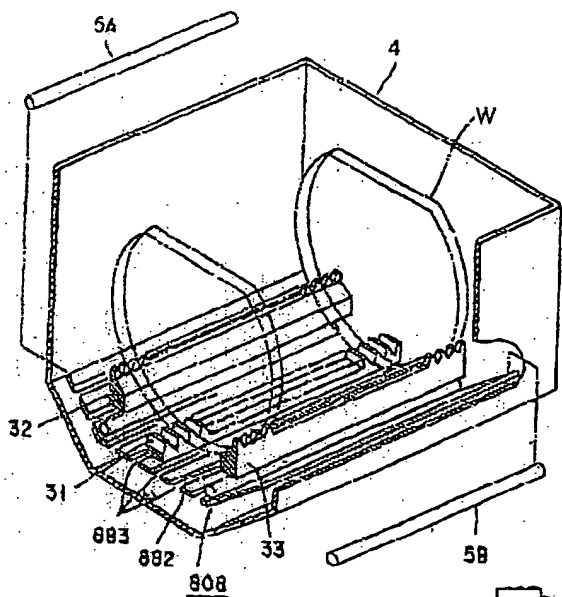


第四十七圖

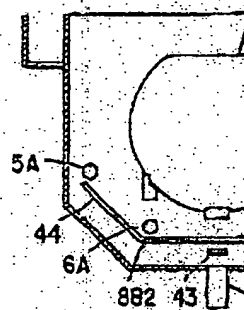


第四十八圖

(22)

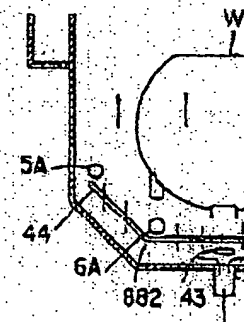
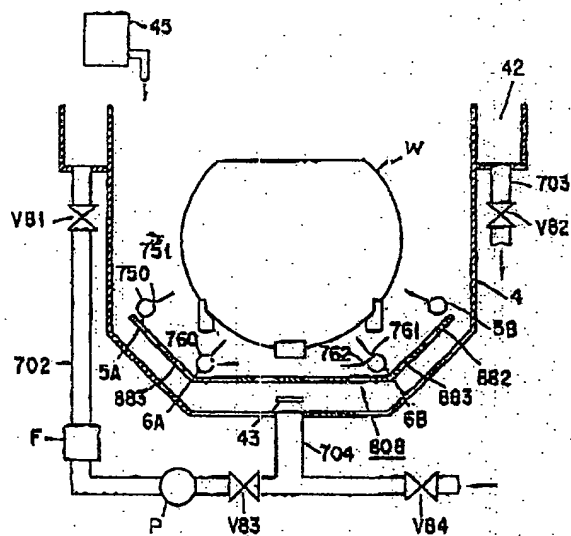


第四十九圖

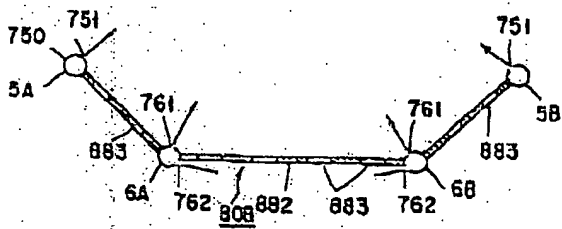


第五十

第五十圖



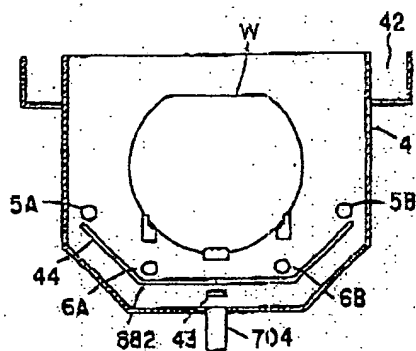
第五十



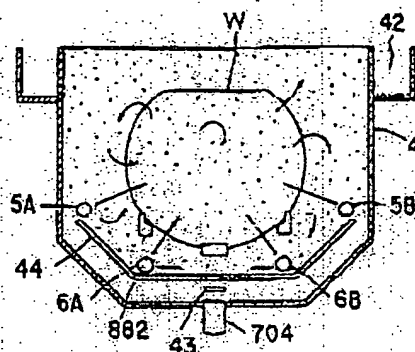
第五十一圖

(23)

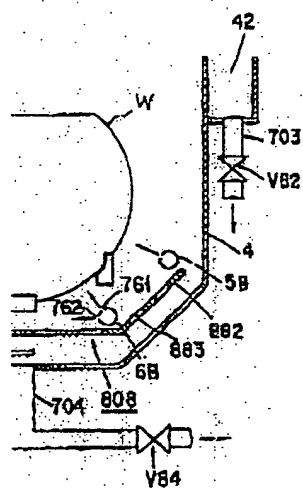
九圖



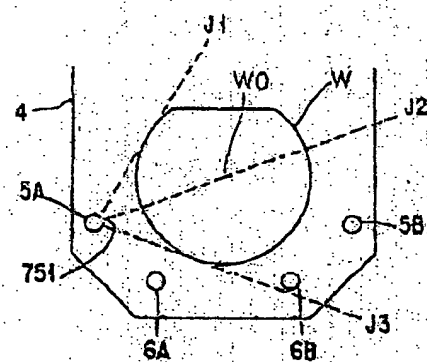
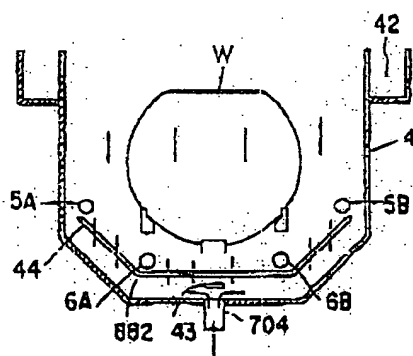
第五十二圖 A



第五十二圖 B

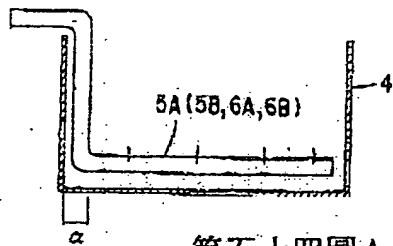


第五十二圖 C

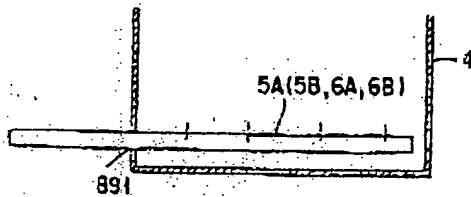


第五十三圖

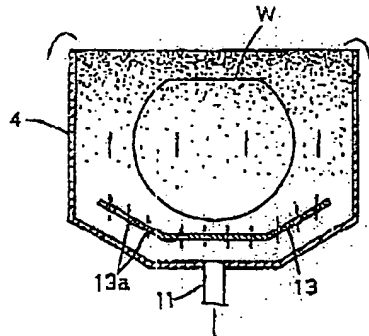
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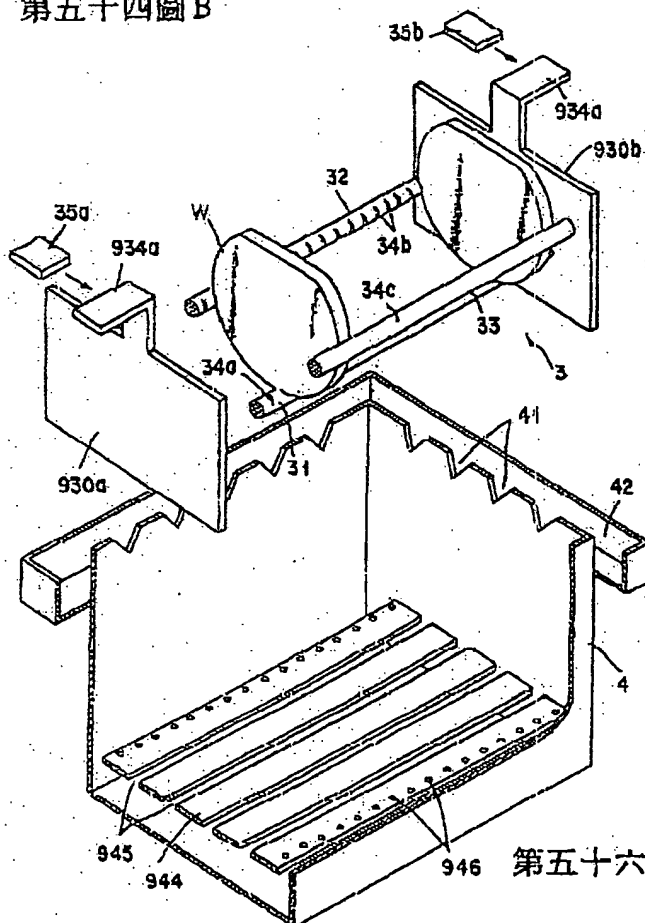
第五十四圖 A



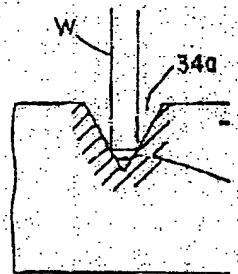
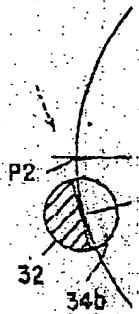
第五十四圖 B



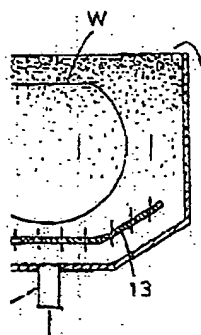
第五十五圖



第五十六圖



第五十八圖

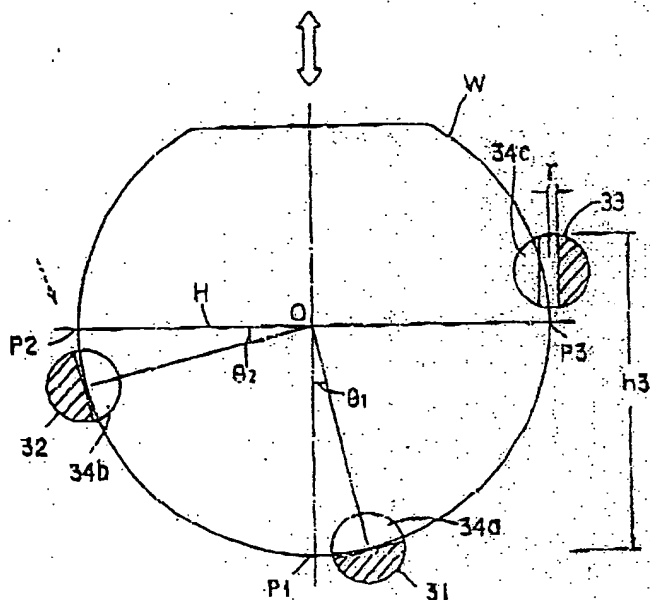


五十五圖

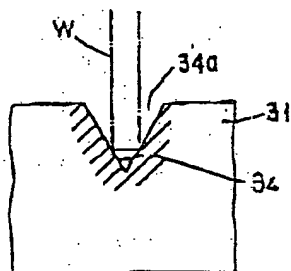


五十六圖

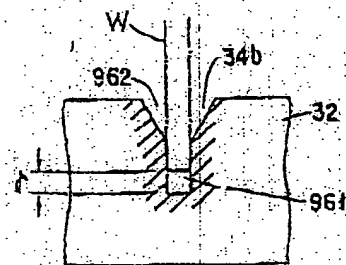
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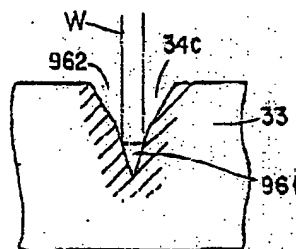
第五十七圖



第五十八圖 A

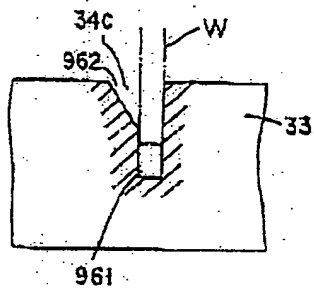


第五十八圖 B

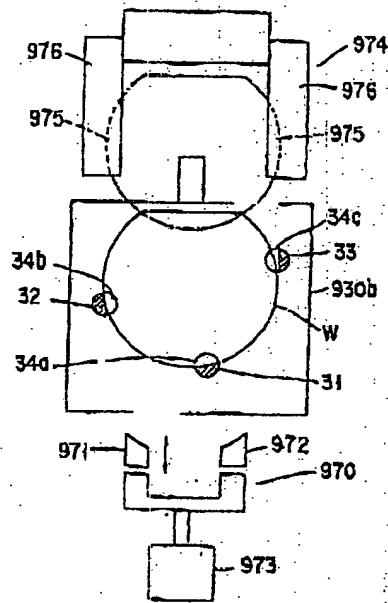


第五十八圖 C

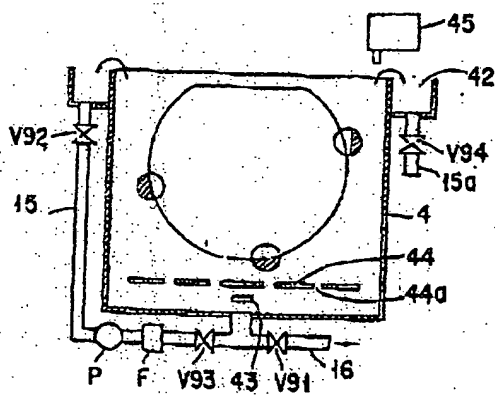
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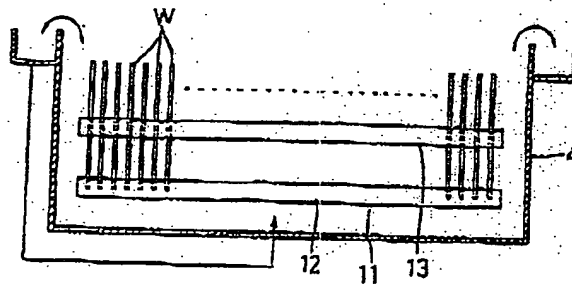
第五十八圖 D



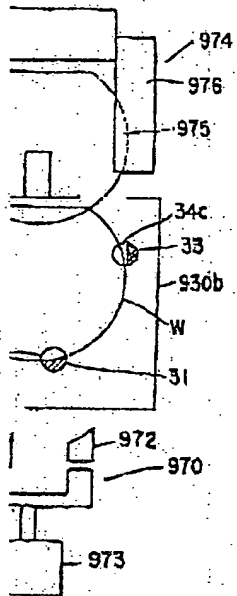
第五十九圖



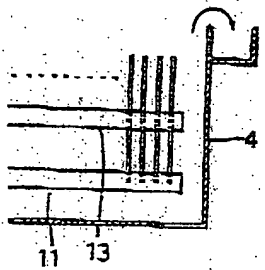
第六十圖



第六十一圖

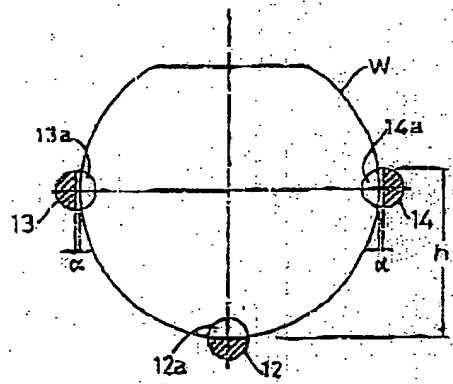


五十九圖

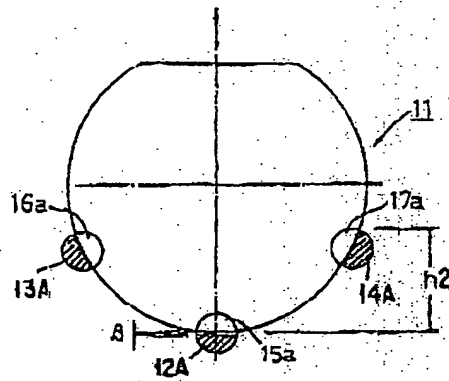


六十圖

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第六十二圖



第六十三圖

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